

REMARKS

The above amendment and these remarks are responsive to the communication from Examiner Dustin Nguyen dated 3/9/2005.

Claims 1-27 are in the case, none as yet allowed.

35 U.S.C. 112

Claims 1-3, 7, 11 and 12 have been rejected under 35 U.S.C. 112, second paragraph, as indefinite, with the term "workstation" lacking antecedent basis in claims 1, 7, and 11.

Applicants have amended the claims to correct the indefiniteness, however noting that in claim 7 the term "workstation" is used as an adjective on "display", and the parent claim 4 does provide antecedent basis for "workstation display".

Claims 1-7, 9-27 have been rejected under 35 U.S.C. 103(a) over Kroll et al. [U.S. Patent 5,159,684, hereinafter, Kroll] in view of Bass et al. [U.S. Patent 6,076,081, hereinafter Bass].

In Applicants' invention, a method is described of sending each keystroke individually (that is, full duplex character interactive mode) to the server as they occur, even though the end client is forced to communicate in 1/2 duplex block mode by the (2370 or 5250) mode enforced by the initial server.

With respect to claims 1-7 and 9-25, applicants traverse.

Applicants previously amended all independent claims to clarify that single characters are transferred as they are entered at character entry devices even though operating in a half duplex block mode environment in which character sequences are normally transferred.

First, with respect to Kroll. In general, Kroll describes a version of a UART (Universal Asynchronous Receiver Transmitter) integrated circuit that supports an echoplex protocol in addition to the normal simplex protocol found in more standard UART's. By adding a second pair of serial transmitters and receivers, each bit can be echo'ed back to the sender in order to perform error checking on a bit by bit basis.

Kroll Fig. 1 describes line drivers and timings for determining when a line driver inserts a zero or a 1 on the transmission line and how they are to be interpreted on the receiver end of the line. Timings and signal levels are described for a "Data" flag, an "End of Word" flag, and an "End of Message" flag.

A line transceiver such as Kroll describes would be considered as running in the link layer of a TCP/IP protocol stack, or in the physical layer of the OSI networking model. The protocols described in applicant's specification "Full duplex character interactive input/output mode", and "Half duplex block mode" are presentation layer protocols (in the OSI networking model) or application layer protocols (in the TCP/IP protocol stack) and as such there is no relationship

between the terms echoplex and half duplex block mode, or RS-232 mode and full duplex character interactive input/output mode.

Applicants have amended all independent claims to recite that the communications protocols of the invention execute in the application layer of a protocol stack, and that at the layer communications can occur through the half duplex block mode with server applications which require either half duplex block mode or full duplex character interactive input/output mode. Support for these clarifications to the claims is found in Figure 6 and at pages 9 and 14 of the specification.

Additionally, since Kroll describes serial transmissions, everything he describes is in terms of bits. There is no attempt to describe application layer protocols that would of necessity be defined as various groupings or patterns of bytes, and everything he describes is in terms of bit transmissions through a serial device at the physical/link layer.

That is, Kroll shows (Fig. 1) an end of word flag (a byte) and an end of message flag (a grouping or pattern of

bytes that could make up a protocol), but there is no attempt to describe the contents of any messages that flows through Kroll's device at the application level, and hence there is no description of protocols such as "half duplex block mode" or "full duplex character interactive I/O mode". Applicants claims are clearly limited to such protocol modes, and thus distinguish the references cited.

Second, with respect to Bass. Bass describes a converter module for interfacing a host computer or postage scale using serial communication to a postage meter and mailing machine using Echoplex communications. Fig.1 of Bass (described at Col. 4, lines 34-44) shows a postage scale connected to a postage meter through a (serial) converter interface module. There is no client or server described, and no client server grouping described such that an additional client (also not described) could communicate in "full duplex character I/O mode" over a "half duplex block mode" interface, both of which are also not described. Everything described is for serial (bits) transmission. There is no attempt to describe protocols or groupings of clients and servers using those protocols to form cascaded communication structures as set forth in claim 6 of applicant's invention.

Considering the rejection of the various claims, with respect to claim 1, the Examiner states:

"Kroll discloses the invention substantially as claimed including a method for character interactive input/output in a half duplex block mode environment including a client workstation and a server, comprising the steps of: automatically transferring said keystroke from said workstation over a half duplex block mode interface to a full duplex character interactive input/output server application [i.e. Echoplex mode to RS-232 mode] [col I, lines 42-52; and col 5, lines 37-47]..."

These paragraphs describe the typical functionality of a UART, i.e it performs a parallel to serial conversion on outgoing bytes to be transmitted, and serial to parallel conversion on received bytes. However, half duplex block mode and full duplex character interactive I/O mode are not described nor would they have any relevance in this context.

The Examiner continues:

"..and said full duplex character interactive input/output server application processing said

keystroke and responding appropriate to context of said full duplex character interactive server application [i.e. communicate with RS 232 devices or applications] [col2, lines 6-11]..."

Kroll here states "The chip can be used for Echoplex communication as well as for certain RS-232 communication applications." This describes the fact that the chip can either run with error checking on "Echoplex mode" or with error checking off, what Kroll terms "RS-232 mode".

"and col 13, lines 27-col. 14, lines 1-3]..."

Kroll here states "Full Duplex Asynchronous Receiver/Transmitter to be used for RS-232 applications."

"Full duplex" refers to the transmission of data in two directions simultaneously, while half duplex refers to the transmission of data in just one direction at a time. The term "half duplex" is not equivalent to "half duplex block mode as described in applicant's specification disclosure, and the term "full duplex" is not equivalent to "full duplex character interactive input/output mode" as describe in applicant's specification. [See specification, page 9.]

That is, RS232 refers to a standard interface approved by the Electronic Industries Alliance (EIA) for connecting serial devices, is a physical layer protocol and is therefore not relevant in the context of applicant's claims.

The Examiner continues,

"thereby transferring single key strokes as they are entered at said client workstation even though operating in said half duplex block mode environment in which character sequences are normally transferred [Col. 1, lines 47-52; and Col. 11, lines 5-35]."

Here Kroll is describing serial to parallel conversions. The Examiner appears to have missed a central point in applicant's claim: specifically that applicants provide a method of operating in full duplex character interactive input/output mode even though the current environment requires a half duplex block mode interface (which is an application layer interface), and this is done without changing either the client, the server, or the business logic of the application.

The Examiner continues:

"Kroll does not specifically disclose receiving a key stroke into a buffer at said workstation. Bass discloses receiving a key stroke into a buffer at said workstation [i.e. enter at the keyboard] [18, Figure 1; and col4, lines 13-16].

"It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Beardsley and Angelo because Angelo's teaching of buffering keystroke would allow to control and manipulate input information."

Applicant's interpret the above statement of the Examiner as referring to the combination of Kroll and Bass, not Beardsley and Angelo (the latter not being cited in rejecting the claims).

Buffering of keystrokes and data is well known in the art and is simply a single required step in applicant's multi-step process. However, applicants traverse the Examiner's assertion on the obviousness of combining Kroll and Bass and in the combination finding a teaching of applicant's claim 1. Neither reference alone or in combination with the other teaches half duplex block mode

(an application layer interface), nor the use of a half duplex block mode interface to a full duplex character interactive input/output mode server application.

With respect to claim 2, the Examiner states,

"Kroll discloses said buffer being an auto enter, non-display entity on a display screen [col 9, lines 24-29 and lines 35-38]."

Here Kroll supplies further description on how Echoplex, the error detection circuitry works - "The serial signals are also applied to a data bit latch 608 for comparison with echo signals in the comparator 609 to output an echo error flag...". However, there is no discussion of auto enter fields or non-display fields, and in fact any discussion of displays and their formats and protocols have no relevance here.

With respect to claim 3, the Examiner states,

"Kroll discloses said buffer being a non-screen entity accessible to said client workstation [Col. 16, lines 35-39].

Here Kroll provides a basic description on how a typical UART works, and discusses parallel to serial and serial to parallel. Again, displays and their formats and protocols are not discussed at all.

With respect to claim 4, the Examiner states,

As per claim 4, it is rejected for similar reasons as stated above in claims 1 and 2. Furthermore, Kroll discloses defining a workstation display as a 1-byte character input field [i.e. a byte or 8-bits] [Col. 1, lines 59-62].

Here Kroll describes communicating "with the CPU on a byte level through an 8 bit bidirectional data bus..." This does not teach defining a workstation display as a 1-byte character input field, other than the fact that both use the term byte to describe a unit of data.

With respect to claim 5, the Examiner states,

"Kroll discloses communicating an attention signal from said client workstation; responsive to said attention signal, communicating said keystroke from said

workstation display to said server application [Col. 1, lines 56-58]."

Attention signals, interrupts, events etc. are well known in the art, and are simply a required step in a multi-step process.

With respect to claim 6, the Examiner states,

"Kroll does not specifically disclose client workstation and server together becoming a cascaded client to a targeted application server that requires character dependent input/output in full duplex mode. Bass discloses client workstation and server together becoming a cascaded client to a targeted application server that requires character dependent input/output in full duplex mode [Figure 1; and col4, lines 35-44].

Bass describes a converter module for interfacing a host computer or postage scale using serial communication to a postage meter and mailing machine using Echoplex communications. Fig.1 of Bass (described at Col. 4, lines 34-44) shows a postage scale connected to a postage meter through a (serial) converter interface module. There is no

client or server described, and no client server grouping described such that an additional client (also not described) could communicate in "full duplex character I/O mode" over a "half duplex block mode" interface. There is description in Bass of protocols or groupings of clients and servers using those protocols to form cascaded communication structures as set forth in claim 6 of applicant's invention.

With respect to claim 7, the Examiner states,

"Kroll discloses the step preventing display of said input character on said workstation display [i.e. non-echo] [title, and Abstract]."

Applicants traverse. Display or non-display of characters on a screen are completely beyond the scope of anything Kroll describes. The term non-echo described in Kroll refers to the capability of disabling echoplex mode, the error checking mode, and has no relationship to echoing characters to a display screen.

The Examiner rejects claims 9 and 10 for similar reasons as stated above in claims 4 and 5. Applicants respond as above with respect to claims 4 and 5.

With respect to claim 11, the Examiner states,

"Kroll discloses returning from said remote application to said client workstation a display character for display at said workstation display [Col. 3, lines 15-17]."

Applicants traverse. The term "echo" described in Kroll refers to the capability of enabling echoplex mode, the error checking mode, and has no relationship to echoing characters to a display screen.

With respect to claim 12, the Examiner states,

"Kroll discloses an echo character which may be said input character [col3, lines 13-17].

Applicants traverse, as stated above.

Claims 13 and 14 are rejected for similar reasons as stated above in claims 4 and 5, to which applicants respond as above with respect to claims 4 and 5.

Claim 15 is rejected for similar reasons as stated

above with respect to claim 12, to which applicants respond as above with respect to claims 11 and 12.

Claims 16-25 have been rejected for similar reasons as stated above for claims 1-12, to which applicants respond as above with respect to claims 1-12.

While the Examiner states [paragraph 5 of the Office Action] that claims 26 and 27 have been rejected under Kroll in view of Bass, the discussion of claims 26 and 27 presented by the Examiner at page 6 of the Office Action is only in terms of Kroll in view of Bass, and further in view of Busey. See below.

Applicants request that claims 1-7, 9-25 be allowed.

Claims 26 and 27 have been rejected under 35 U.S.C. 103(a) over Kroll in view of Bass, and further in view of Busey et al. [U.S. Patent 5,764,916, hereinafter Busey].

With respect to claims 26 and 27, the Examiner states,

"Kroll and Bass do not specifically disclose

transferring said key stroke from said client workstation to a telnet client and thence to said full duplex character interactive server application via a Unix server. Busey discloses transferring said key stroke from said client workstation to a telnet client and thence to said full duplex character interactive server application via a Unix server [col 3, lines 36-58].

At Col. 3 lines 36-58 Busey teaches "Telnet is a well known streaming protocol used to establish bi-directional continuously opened sockets and full duplex transmission to achieve real time communications. The telnet protocol is an industry standard. UNIX hosts are generally provided with telnet servers as part of their operating systems."

Applicants traverse. Busey describes using a Telnet client to communicate with a Telnet Server on a Unix host to achieve his real time communications connection. Telnet clients communicate with UNIX telnet servers using "full duplex character interactive I/O" mode. This is the way industry standard telnet communications work - a telnet client communicate with UNIX telnet servers in "full duplex character interactive I/O" mode over a "full duplex

character interactive I/O" interface.

Applicants invention relates to methods for communicating in "full duplex character interactive I/O" mode over a "half duplex block" mode interface. Nowhere in Busey does he describe anything other than industry standard usage of telnet, in fact Busey doesn't describe "half duplex block" mode at all.

Applicants request that claims 26 and 27 be allowed.

Claim 8 has been rejected under 35 U.S.C. 103(a) over Kroll in view of Bass, and further in view of Shoquist et al. [U.S. Patent 5,361,199, hereinafter Shoquist].

Claim 8 depends from claim 4, and is distinguished from Kroll and Bass as previously described.

Applicants did not invent converting a character from ASCII to EBCDIC, but it is an important step in the multi-step process which is the subject of claim 8. Further, Shoquist does not run in either 1/2 duplex block mode or full duplex character interactive I/O mode. In fact,

Shoquist does not use Telnet at all for communicating to the mainframe. As such, Shoquist, in combination with Kroll and Bass, does not teach Applicants' invention as set forth in claims 4 and 8.

Applicants request that claim 8 be allowed.

SUMMARY AND CONCLUSION

Applicants urge that rejection of claims 1-27 be reconsidered and withdrawn, and that the case be passed to issue with claims 1-27.

The Application is believed to be in condition for allowance and such action by the Examiner is urged. Should differences remain, however, which do not place one/more of the remaining claims in condition for allowance, the Examiner is requested to phone the undersigned at the number provided below for the purpose of providing constructive assistance and suggestions in accordance with M.P.E.P. Sections 707.02(j) and 707.03 in order that allowable claims can be presented, thereby placing the Application in

condition for allowance without further proceedings being necessary.

Sincerely,

Richard G. Hartmann, et al.

By

Shelley M Beckstrand
Shelley M Beckstrand
Reg. No. 24,886

Date: 2³ Mar 2006

Shelley M Beckstrand, P.C.
Patent Attorney
61 Glenmont Road
Woodlawn, VA 24381-1341

Phone: (276) 238-1972
Fax: (276) 238-1545